

Illinois Institute of Technology  
Life Sciences Building, Room 146A  
3105 South Dearborn  
Illinois, IL, 60616, USA

Office Phone: 312-567-3797  
Cell Phone: 608-354-8279  
blittlej@iit.edu  
<http://home.fnal.gov/~littlej>

### Appointments

Since 2014	<b>Assistant Professor</b> Illinois Institute of Technology
2012-2014	<b>Postdoctoral Fellow</b> University of Cincinnati
2006-2012	<b>Research Assistant</b> University of Wisconsin - Madison

### Education

May 2012	<b>Ph.D. in Physics</b> <i>"Observation of Antineutrino Disappearance at Daya Bay"</i> University of Wisconsin, Madison Advisor: Karsten M. Heeger
June 2006	<b>Bachelor of Science (B.S.) in Physics</b> Minors in Mathematics and Environmental Science Principia College, Elmhurst, Illinois, USA

### Research and Scientific Collaborations

Since 2015	<b>SBND</b> (Detect Fermilab neutrino beam w/ liquid argon TPC) <ul style="list-style-type: none"><li>- Leading design of radioactive source calibration system</li><li>- Leading installation and commissioning of cosmic tagger system</li></ul>
Since 2012	<b>PROSPECT</b> (ORNL-based reactor antineutrino experiment at HFIR) <ul style="list-style-type: none"><li>- Developed physics case for a neutrino oscillation search at HFIR</li><li>- Leading design/assembly of reactor antineutrino detector target</li></ul>
Since 2012	<b>MicroBooNE</b> (Detect Fermilab neutrino beam w/ liquid argon TPC) <ul style="list-style-type: none"><li>- Co-Convenor of Oscillations Physics Analysis Group</li><li>- Level 3 Project Manager: Electronics Rack Infrastructure</li></ul>
Since 2007	<b>Daya Bay</b> (Reactor Antineutrino $\theta_{13}$ Experiment) <ul style="list-style-type: none"><li>- Co-led absolute reactor antineutrino flux measurement</li><li>- Major contribution to detector target vessel R&amp;D, QA, assembly</li></ul>

### Awards, Honors, and Fellowships

2011	<b>2011 APS DPF Travel Grant</b> Awarded to support travel to APS April Meeting
2008	<b>NSF East Asia and Pacific Summer Institute (EAPSI) Fellowship</b> Institute of High Energy Physics, Beijing, China <a href="http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284">http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5284</a>
2006-2007	<b>Van Vleck Fellowship in Physics</b> University of Wisconsin, Madison

### Service and Community Activities

- 2014-present      **Organizing Committee**, ICHEP 2016 (International Conference on High Energy Physics)
- 2014-2015        **Host**, 2015 MicroBooNE Collaboration Workshop, IIT Campus
- 2014-2015        **Sterile Working Group Co-Convener**, WINP 2015 (Workshop on the Intermediate Neutrino Program)
- 2012              **Organizing Committee**, NNN 2012 (Next-Generation Neutron Decay and Neutrino Detectors Workshop)

### Colloquia and Seminars

13. *TBD*

Seminar, Notre Dame University, South Bend, IN, USA, November 3, 2015

12. *Precision Reactor Neutron Spectrum Measurements: Recent Results and PROSPECT's Intensity Frontier Seminar*, Fermilab, Chicago IL, USA, April 16, 2015

11. *Precision Reactor Neutron Spectrum Measurements: Recent Results and PROSPECT's HEP Seminar*, University of Chicago, Chicago IL, USA, November 25, 2014

10. *Probing Mysteries in Particle Physics with Neutrino Oscillations*  
Colloquium, Illinois Institute of Technology, Chicago IL, USA, February 20, 2014

9. *A Relative Spectral Measurement of Neutrino Oscillation at Daya Bay*  
LPPC Seminar, Harvard University, Cambridge, MA, USA, September 25, 2013

8. *A Relative Spectral Measurement of Neutrino Oscillation at Daya Bay*  
Special Seminar, Massachusetts Institute of Technology, Cambridge, MA, USA, September 24, 2013

7. *A Relative Spectral Measurement of Neutrino Oscillation at Daya Bay*  
Particle Physics Seminar, Northwestern University, Chicago, IL, USA, September 9, 2013

6. *A Relative Spectral Measurement of Neutrino Oscillation at Daya Bay*  
Joint Theory/Experimental Seminar (Wine and Cheese Seminar)  
Fermilab, Batavia, IL, USA, September 6, 2013

5. *Exploring the Standard Model and Beyond with Neutrino Oscillations*  
Colloquium, Marquette University, Milwaukee WI, USA, April 18, 2013

4. *Observation of Electron Antineutrino Disappearance at Daya Bay*  
Special Seminar, Illinois Institute of Technology, Chicago, IL, USA, March 15, 2012

3. *Observation of Electron Antineutrino Disappearance at Daya Bay*  
Special Seminar, University of Cincinnati, Cincinnati, OH, USA, March 12, 2012

2. *Toward a Precision Measurement of  $\theta_{13}$  at Daya Bay*  
HEP Seminar, Argonne National Laboratory, Argonne, IL, USA, January 3, 2012

1. *Neutrinos and Neutrino Oscillations: From Fermi to Daya Bay and Beyond*  
Colloquium, Marquette University, Milwaukee, Wisconsin, USA, April 17, 2009

## Conference and Workshop Presentations

19. *Sterile Neutrino Searches*

Neutrino Factories 2015 Conference (NuFact15)  
Rio de Janeiro, Brazil, August 13, 2015

18. *PROSPECTs for Short-Baseline Oscillation Searches at Reactors*

Conference on the Intersections of Particle And Nuclear Physics (CIPANP)  
Vail, Co, May 18, 2015

17. *Sterile Neutrino Working Group Summary*

Workshop for the Intermediate Neutrino Program  
Brookhaven, NY, February 6, 2015

16. *Precision Reactor Antineutrino Spectrum Predictions and Measurements*

Applied Antineutrino Physics Workshop 2014  
APC, Paris France, December 15-16, 2014

15. *Measurement of the Absolute Reactor Antineutrino Flux at Daya Bay (poster)*

Neutrino 2014  
Boston, MA, June 2-7, 2014

14. *Absolute Antineutrino Detection Efficiency at Daya Bay (poster)*

APS April Meeting 2014  
Savannah, GA, April 5-8, 2014

13. *PROSPECT: A Precision Reactor Oscillation and Spectrum Experiment*

APS April Meeting 2014  
Savannah, GA, April 5-8, 2014

12. *Status of US Short Baseline Reactor Efforts*

IPA 2013: IceCube Particle Astrophysics Forum  
Madison, WI, May 13-15, 2013

11. *Characterizing Energy Response in the Daya Bay Detectors*

APS April Meeting  
Denver, Co, April 13-16, 2013

10. *Worldwide Initiatives Toward Very Short Baseline Oscillation Searches*

NNN 2012: Next-Generation Neutrino and Nucleon Decay Detectors  
Fermilab, Batavia IL, October 4-6, 2012

9. *Opportunities for a Very Short Baseline Reactor Neutrino Experiment in the US (poster)*

NNN 2012 Conference: Next-Generation Neutrino and Nucleon Decay Detectors  
Fermilab, Batavia IL, October 4-6, 2012

8. *An Improved Measurement of Electron Antineutrino Disappearance at Daya Bay*

2012 New Perspectives Meeting  
Fermilab, Batavia IL, June 14, 2012

7. *Source and Reactor Experiments*

2012 Future Short-Baseline Neutrino Experiments Workshop  
Fermilab, Batavia IL, March 21, 2012

6. *Searching for Sterile Neutrinos at Daya Bay* (poster)  
2011 Intensity Frontier Workshop  
Rockville, Maryland, USA, November 30 – December 2, 2011
5. *Searching for Sterile Neutrinos at Daya Bay* (poster)  
SNAC 2011, Sterile Neutrinos at the Crossroads  
Blacksburg, Virginia, USA, September 25-28, 2011
4. *Development and Characterization of the Acrylic Target Vessels for the Daya Bay Experiment* (poster)  
TIPP 2011, Technology and Instrumentation in Particle Physics  
Chicago, Illinois, USA, June 9-14, 2011
3. *The First Pair of Antineutrino Detectors for the Daya Bay Experiment*  
APS April Meeting 2011  
Anaheim, California, USA, April 30 – May 3, 2011
2. *Acrylic R&D for Neutrino and Dark Matter Experiments*  
ANT 2010, Advances in Neutrino Technology  
Santa Fe, New Mexico, USA, September 16-18, 2010
1. *Design and Operation of the Daya Bay Antineutrino Detectors*  
Pheno 2010 Symposium  
Madison, Wisconsin USA, May 10-12, 2010

#### Refereed Journal Articles

(\* indicates Bryce Littlejohn as corresponding author)

*\* Light Collection and Pulse Shape Discrimination in Elongated Scintillator Cells for the PROSPECT Reactor Antineutrino Experiment.*

J. Ashenfelter, *et. al.*, PROSPECT Collaboration  
Submitted to JINST

*Measurement of the Reactor Antineutrino Flux and Spectrum at Daya Bay*

F. An, *et. al.*, Daya Bay Collaboration  
Submitted to Phys. Rev. Lett.

*The Detector Subsystem of The Daya Bay Reactor Antineutrino Experiment*

F. An, *et. al.*, Daya Bay Collaboration  
Submitted to JINST

*Background Radiation Measurements at High Power Research Reactors*

J. Ashenfelter, *et. al.*, PROSPECT Collaboration  
Accepted to Nucl. Inst. Meth A.

*A New Measurement of Antineutrino Oscillation With The Full Detector Configuration at Daya Bay*

F. An, *et. al.*, Daya Bay Collaboration  
Accepted to Phys. Rev. Lett.

*Search for a Light Sterile Neutrino at Daya Bay*

F. An, *et. al.*, Daya Bay Collaboration  
Phys. Rev. Lett 113 141802 (2014)

*Independent Measurement of  $\theta_{13}$  Via Neutron Capture on Hydrogen at Daya Bay*

F. An, *et. al.*, Daya Bay Collaboration  
Phys. Rev. D90 071101 (2014)

*Spectral Measurement of Electron Antineutrino Oscillation Amplitude and Frequency at Daya Bay*  
F. An, *et. al.*, Daya Bay Collaboration  
Phys. Rev. Lett. **112** 061801 (2014)

*Assembly and Installation of the Daya Bay Antineutrino Detectors*  
H. R. Band, *et. al.*  
JINST **8** T11006 (2013)

\* *Multiple Detectors for a Short-Baseline Neutrino Oscillation Search Near Reactors*  
K. M. Heeger, B. R. Littlejohn, H. P. Mumm  
arXiv[hep-ex]1307.2859 (2013), submitted to NIM A

\* *Experimental Parameters for a Reactor Antineutrino Experiment at Very Short Baselines*  
K. M. Heeger, B. R. Littlejohn, H. P. Mumm, M. Tobin  
Phys. Rev. D **87**, 073008 (2013).

\* *Search for Sterile Neutrinos with a Radioactive Source at Daya Bay*  
D. Dwyer, K.M. Heeger, B. R. Littlejohn, and P. Vogel  
Phys. Rev. D **87**, 093002 (2013).

*Improved Measurement of Electron Antineutrino Disappearance at Daya Bay*  
F. An, *et. al.*, Daya Bay Collaboration  
Chin. Phys. C **37** 011001 (2013).

\* *Long-Term Testing and Properties of Acrylic for the Daya Bay Antineutrino Detectors*  
M. Krohn, B. R. Littlejohn, K. M. Heeger  
JINST **7**, T08001 (2012).

*Observation of Electron Antineutrino Disappearance at Daya Bay*  
F. An, *et. al.*, Daya Bay Collaboration  
Phys. Rev. Lett. **108** 171803 (2012)

*A Side-by-side Comparison of Daya Bay Antineutrino Detectors*  
F. An, *et. al.*, Daya Bay Collaboration  
Nucl. Inst. Meth. **A685** 78 (2012)

\* *Acrylic Vessels for a High-Precision Measurement of  $\theta_{13}$  with the Daya Bay Antineutrino Experiment*  
H. R. Band, *et. al.*, JINST **7** P06004 (2012)

\* *Degradation of the Optical Properties of UV-Transmitting Acrylic for Neutrino and Dark Matter Experiments*  
B. R. Littlejohn, K.M. Heeger, T.Wise, E. Gettrust, M. Lyman,  
JINST **4** T09001 (2009)

*Analysis of  $B \rightarrow \omega l \nu$  Decays with BaBar*  
Y. Chu, B. Littlejohn, J. Dingfelder  
Journal of Undergraduate Research **6** 24 (2006).

### **Proposals, Reports, and White Papers**

(\* indicates significant contributions from Bryce Littlejohn)

\* *The Intermediate Neutrino Program.* arXiv[hep-ex]1503.06637 (2015)

*A Proposal for a Three Detector Short-Baseline Neutrino Oscillation Program in the Fermilab Booster Neutrino Beam.* arxiv[ins-det]1503.01520 (2015)

\* *Snowmass 2013 Summer Study: Neutrino Subgroup Report*. arXiv[hep-ex]1310.4340 (2013)

\* *PROSPECT – A Precision Reactor Neutrino and Oscillation Spectrum Experiment at Short Baselines* arXiv[ins-det]: 1309.7647 (2013)

\* *Snowmass 2013 Young Physicists Science and Career Survey Report*, arXiv[physics.soc-ph]: 1307.8080 (2013)

*Neutrino Mass Hierarchy Determination and Other Physics Potential of Medium-Baseline Reactor Neutrino Oscillation Experiments*, arXiv[hep-ex]: 1307.7419 (2013)

*Fundamental Physics at the Intensity Frontier*, arXiv[hep-ex]:1205.2671 (2012)

\* *Light Sterile Neutrinos: A White Paper*, arXiv[hep-ex]:1204.5379 (2012)

\* *Precision Measurement of the Neutrino Mixing Angle  $\theta_{13}$  at Daya Bay*, arXiv[hep-ex]: 0701029 (2007)

#### Languages

- English (native)
- German (comprehension)
- Chinese (comprehension)

**References available upon request**